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C.I.A. CHANGES WAY THAT IT MEASURES SOVIET ATOM TESTS

U.S. CHARGES QUESTIONED

Readings Will Be Lower and Officials Debate Issue of Past Russian Cheating

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WASHINGTON, April 1 — The Central Intelligence Agency has changed its procedures for estimating the yield of large Soviet nuclear tests because it has decided its previous estimates were too high, Reagan Administration officials said today.

The officials said the decision to use the new method was made in January by William J. Casey, the Director of Central Intelligence, despite objections from some Defense Department officials.

Reagan Requests a Report

The C.I.A. decision has raised questions about past Administration assertions that the Soviet Union had probably violated the Threshold Test Ban Treaty of 1974, which limits underground tests to no more than 150 kilotons.

Before the C.I.A. decision was made, President Reagan ordered a report on how the change would affect Administration concerns about Soviet Union violations, the Administration officials said. That report has not yet been completed.

Mr. Casey formally approved the change on Jan. 21, officials said. Experts familiar with the change say it will lower estimates of the yield of Soviet tests by about 20 percent.

No White House Comment

Richard N. Perle, the Assistant Secretary of Defense for International Security Policy, reportedly opposed adopting the recommendations and argued that the issue needed more study. Mr. Perle declined to discuss the issue.

Edward P. Djerejian, a White House spokesman, said the White House had

no comment at this time on the decision and its implications.

Administration experts, who asked not to be identified, were divided about whether the change should lead the Administration to drop its allegations against the Soviet Union.

The accusations of Soviet arms control violations has become a central issue in United States-Soviet relations. No significant progress has been made in this area since the November summit meeting President Reagan and Mikhail S. Gorbachev, the Soviet leader.

Deliberations Over Treaty

The Reagan Administration is currently deliberating over what actions to take in response to reported arms control violations and in considering whether to modify its commitment not to undercut the 1979 Strategic Arms Limitations Treaty.

The Administration has said that many of the Soviet tests had "likely" violated the threshold treaty, which stipulates that the size of warheads being tested should not exceed 150 kilotons, equal to the explosive force of 150,000 tons of TNT. The Soviet Union has denied violating the treaty.

But Administration and nongovernmental experts have long questioned the accuracy of the intelligence estimates on which those charges were based.

The debate has centered on the seismological procedures for assessing the yield of nuclear tests. The main Soviet test site at Semipalatinsk in Central Asia is older and more geologically stable than the site in Nevada where the United States conducts its tests.

Larger Wave Is Produced

Scientists say Soviet explosions produce a larger sound wave through the earth than American tests of the same size.

While Government intelligence estimates of Soviet tests have long been adjusted to take this into account, experts have questioned whether the adjustment factor was large enough.

Officials said the question of changing the United States estimating procedure has been under review and study for years.

New Studies Come to Light

The issue came to the fore again last year after several new studies.

Last Oct. 18, a panel of scientists selected by the Defense Advanced Research Projects Agency prepared a classified report that concluded that Government's method for estimating the yield of Soviet explosions was based on faulty assumptions.

The eight-member panel recommended a change in procedures that would lower the estimates.

The panel's report was submitted in late October to the Joint Atomic Energy Intelligence Committee, which issues reports on the size of foreign nuclear explosions. The committee is

made up of members from the military services and intelligence agencies.

Second Study Adds Support

Adding support to the scientists' recommendation was a separate study, also completed in October, that was overseen by the Air Force Technical Applications Center, which operates a system of seismic stations to monitor Soviet tests. This study agreed with the finding of the military research agency report.

On Dec. 17, the Joint Atomic Energy Intelligence Committee recommended that the C.I.A. adopt the advice in the report commissioned by the research agency. Officials said the Defense Intelligence Agency disagreed, but was overruled.

The new C.I.A. procedure will be used to estimate the size of explosions in the Shagan River area of Semipalatinsk, where the Soviet Union conducts its largest nuclear tests. Officials said they expected the new estimating procedure to be applied to the next Soviet test in this area. The Soviet Union has not held a nuclear test since last summer, when it declared a unilateral moratorium on tests and asked the United States to join in a total test ban.

What the new procedure means about past Administration allegations about Soviet cheating is unclear.

Reagan Signs Directive

At the time the Administration prepared its report to Congress charging Soviet arms control violations, President Reagan signed a National Security Decision Directive, NSDD-202, that asked for a report on how the new method would reflect on past United States charges of violations by the Soviet Union.

This is the report that has not been completed, and officials are divided about whether the Russians have been violating the treaty.

Officials said applying the new method retroactively would still leave about a dozen Soviet tests that appear to be above the limit, although one official said that three or four of these exceeded the limit enough to warrant special concern.

The new procedure also suggests that the largest Soviet blast since the signing of the threshold treaty in 1974 was no higher than 250 kilotons. The Administration has previously said that the Soviet Union has conducted a test that was greater than 300 kilotons.

Violations Still 'Likely'

One Administration official said the new data still point "in the direction of a likely violation" and noted that the Administration qualified its charges against the Soviet Union.

But another official said the change in the estimating procedure would significantly undercut the charges.

He said that given the uncertainty involved in seismic measurements, it was usual to expect some Soviet tests to appear to exceed the 150-kiloton limit. He added that some American tests that are under that limit may also appear to the Soviets to exceed the limit.

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A spokesman for the Arms Control and Disarmament Agency said the agency was "not in a position to put forward any official agency view on this matter at this time."

Some Longstanding Questions

While officials familiar with the C.I.A. decision declined to be quoted on the record, other experts have openly supported the view that some estimates of the yield of Soviet tests have been too high.

Roger Batzel, the director of the Lawrence Livermore National Laboratory, in California, said in written testimony to Congress yet to be made public that the Soviet Union might be complying with the treaty.

"Based on our assessment of the relationship between yield and seismic

magnitude for the Soviet test site and the pattern of Soviet testing," he said. "We have concluded that the Soviets appear to be observing a yield limit. Our best estimate of this yield limit is consistent" with the threshold test ban. "However," he added, "the seismic data are subject to considerable statistical uncertainty."

That view differs from officials at the Los Alamos National Laboratory, in New Mexico, who have told Congress that verification of the threshold treaty is highly uncertain.

But a retired admiral, Sylvester R. Foley Jr., the Assistant Secretary for Defense Programs at the Energy Department, which oversees nuclear testing, said in an interview that he tended to agree with Mr. Batzel's assessment.